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The opening pages of

1983 Ducati Bevel-Drive Restoration Guide

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Ducati Bevel-Drive Twins

1983

Model year 1983 only — one model year, one guide

Bevel models in production this year

- Mike Hailwood Replica
- S2

Era	1971–1986 bevel-twin period (Falloon)
Cam drive	Bevel gears + shafts (never belts)
This guide	Covers model year 1983 only

A source-backed restoration companion to the Ducati factory workshop manual. Every specification cites its published source; anything the sources do not confirm is flagged **[UNVERIFIED]** rather than guessed.

Companion to — not a replacement for — the factory workshop manual. Wiring: consult the factory manual's year-correct wiring diagram; this guide's electrical appendix is an inspection supplement only.

Read this first — what this guide is

This guide is a restoration companion to the Ducati factory workshop manual, not a replacement for it. It covers **model year 1983 only** — every bevel-drive twin Ducati built that year. It gives you what the manual doesn't: the correct sequence, the model-year change points, what to measure before cleaning, what not to do, finishes and markings, parts interchange, and honest value guidance.

The spec tables are the law of this guide: every numeric value carries its source. Where the literature is silent, the cell says **[UNVERIFIED]** instead of guessing. Procedures are written from the tables only.

Manufacturer history

Ducati's bevel-drive twins began with the 1971 750 GT — Fabio Taglioni's 90° V-twin ('L-twin'), the first Ducati with that configuration, which became the signature of everything that followed (en.wikipedia.org/wiki/Ducati_750_GT (citing Ian Falloon, The Ducati 750 Bible, Veloce)). The 'round case' 750s (GT, Sport, SS) ran 1971–1975; the 'square case' 860/900 generation (GT/GTE/GTS/900GTS, 900SS, Darmah, MHR, S2, Mille) ran 1974–1986 (en.wikipedia.org/wiki/Ducati_860_GT; Ian Falloon, Ducati Bevel Twins 1971 to 1986 (via motociclo.com.au: covers 750 GT/Sport/SS, 860 GT/GTE/GTS, 900 SS/GTS, SD, SSD, MHR, S2, Mille)). The desmodromic valve gear — positive mechanical closing of the valves, no springs — is the signature technology of the sporting bevels from the 750SS on.

Model history — 1983

What is unique about this model year: The quiet bevel year: with the 900SS and Darmah gone, the MHR and S2 are the only new Giugiaro-cased bevel models — 'the only new Giugiaro cased bevel models after this were the Mike Hailwood Replica... and the S2' (en.wikipedia.org/wiki/Ducati_L-twin_engine).

What this guide doesn't cover

- Factory torque values and full disassembly procedures — the factory workshop manual is the authority; this guide points at it.
- The year-correct wiring diagram itself — consult the factory manual's diagram for your exact model. The appendix here is a clearly-labelled **supplement**, never presented as the diagram.
- Other model years. A 1976 part on a 1975 bike is a mismatch until proven otherwise — check the year-change register.
- Belt-drive Ducatis (Pantah and later) — this guide covers bevel-gear cam drive only.
- Aftermarket performance modifications. This guide restores to factory-correct specification.

Model identification

Confirm exactly which bevel twin you have **before** ordering parts or stripping finishes. Engine-number and frame-number prefixes encode the model; round-case vs square-case crankcases are visible at a glance.

Check	What to look for	Why it matters
Crankcase shape	Round cases = 750 family (GT/Sport/SS); square/angular cases = 860/900 family	The two engine generations share almost no bottom-end parts
Valve gear	Desmodromic heads (positive closing, no springs) = SS/SS900/Darmah/MHR sport models; spring-valve heads = GT/860 tourers	Desmo heads need desmo shims and a different setting procedure
Carburettors	Body markings: Amal 930 (early GT), Dell'Orto PHF32 (Sport/GT), PHM40 (SS/SS900), PHF32 (Darmah/GTS)	Carb type is a year identifier — record before cleaning
Brakes	Lockheed (1971) → Scarab (1972–1973) → Brembo (1974–) calipers; drum vs disc rear	Brake generation marks the model year (Hagerty; motorcyclespecs.co.za)

- Photograph the frame-number and engine-number stampings before any blasting or painting. They are the bike's identity evidence.
- Round-case vs square-case is the first fork in every parts decision — confirm it before ordering.
- US-market bikes from 1975 carry the left-shift conversion (external crossover rod on 860s; internal on later 900SS) — verify which your bike has (en.wikipedia.org/wiki/Ducati_860_GT; motorcycleclassics.com (Ducati 900SS)).

Year-change register — 1983

Running changes that define this model year, and why each matters at the bench. Every entry cites its source.

- Bevel line for 1983: MHR + S2 only (en.wikipedia.org/wiki/Ducati_L-twin_engine).
- MHR: cosmetic NCR replica; road bike dressed as a racer (en.wikipedia.org/wiki/Ducati_L-twin_engine).
- S2: sports bevel twin (Ian Falloon, Ducati Bevel Twins 1971 to 1986 (via motociclo.com.au: covers 750 GT/Sport/SS, 860 GT/GTE/GTS, 900 SS/GTS, SD, SSD, MHR, S2, Mille)).
- Detail figures for 1983 MHR/S2 are [UNVERIFIED — not in factory literature] in the consulted references — set from the factory workshop manual.

What came next

For 1984 the Mille engine arrives: 973 cc (88 x 80 mm), one-piece forged nitrided crank, plain big-end bearings, 80 psi oil, Nippon Denso starter, no kick-start (en.wikipedia.org/wiki/Ducati_L-twin_engine).

Interchange rule: a part that differs between these year entries is not interchangeable until the factory parts book for your exact model says so.

Verified specifications — 1983 only

Every number below cites the published marque reference it came from. Rows marked **[UNVERIFIED]** are numbers the consulted sources do not confirm — they are omitted from procedures, not guessed.

Mike Hailwood Replica / S2 / Mille

SPEC	VALUE	UNIT	SOURCE
Engine	Air-cooled 90° V-twin ('square case'), SOHC bevel drive, desmodromic 2-valve heads		en.wikipedia.org/wiki/Ducati_L-twin_engine
Displacement	864 (MHR/S2) / 973 (Mille: 88 x 80 mm)	cc	en.wikipedia.org/wiki/Ducati_L-twin_engine
Mille crankshaft	One-piece forged nitrided crank, plain big-end bearings, larger oil pump at 80 psi		en.wikipedia.org/wiki/Ducati_L-twin_engine
Starting (Mille)	Nippon Denso electric; no kick-starter		en.wikipedia.org/wiki/Ducati_L-twin_engine
Styling	MHR: cosmetic NCR-racer replica (1978 TT win); S2: sports variant		en.wikipedia.org/wiki/Ducati_L-twin_engine
Production note	MHR outsold S2 nine to one		en.wikipedia.org/wiki/Ducati_L-twin_engine
Detailed specs	[UNVERIFIED — not in factory literature]		MHR/S2/Mille detail figures are not in the consulted references — set from the factory workshop manual.

Sequenced procedures

Scope: 1983 bevel-drive twins (Mike Hailwood Replica, S2). **Order of work:** record condition first, then disassemble system by system in the order below. **What breaks if you don't:** cleaning or machining before measuring destroys the evidence the spec tables need.

1. Assessment and identity record

- 1. Photograph the complete motorcycle, then the frame/engine number stampings and every finish/markings detail.
- 2. Confirm round-case vs square-case and desmo vs spring-valve heads (see identification table) — this decides every parts order.
- 3. Record carburettor body markings per carburettor and brake-caliper generation (Lockheed/Scarab/Brembo) before touching anything.
- 4. Checkpoint: if the evidence disagrees with the claimed year, stop and resolve identity first.

2. Desmodromic valve train (SS/SS900/Darmah/MHR)

- 1. Measure and record every valve's opening AND closing clearances before disturbing the cams — desmo needs both, set with shims, no springs.
- 2. Keep each shim labelled to its valve and position (opener/closer). Desmo shims are not interchangeable with spring-head shims.
- 3. Clearance figures are [UNVERIFIED] in the consulted sources: record what you find, set only from the factory workshop manual.
- 4. Bevel-gear cam drive: the bevel gears are lapped pairs — mark mesh positions before separation; do not mix gear sets between heads.

3. Spring-valve top end (GT/860 tourers)

- 1. Record valve clearances before disturbing the camshafts; keep shims with their valves.
- 2. Bevel-gear drive: same lapped-pair rule — mark and keep gear sets together.
- 3. Measure bore and record piston/cylinder markings before any honing decision.

4. Carburetion and fuel system

- 1. Record jetting and carb body codes as found, per carburettor — carb type is a year identifier on these bikes.
- 2. Fibreglass tanks (1971–1972 GT, 1975 900SS): check for ethanol damage and liner failure before sealing — do not seal a tank with structural cracks.
- 3. Replace fuel lines; verify petcock function before blaming carburetion.

5. Brakes, wheels and chassis

- 1. Brake generation check: Lockheed (1971) / Scarab (1972–1973) / Brembo (1974–) — rebuild with generation-correct kits.